

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 7-13 and 18. (Canceled)

1. (Currently Amended) An isolated DNA comprising nucleotides encoding a polypeptide having an amino acid sequence selected from the group consisting of ~~SEQ.ID.NO.:~~ SEQ ID NO:3, ~~SEQ.ID.NO.:~~ SEQ ID NO:5, and ~~SEQ.ID.NO.:~~ SEQ ID NO:29.

2. (Currently Amended) The DNA of claim 1 comprising a nucleotide sequence selected from the group consisting of: ~~SEQ.ID.NO.:~~ SEQ ID NO:1, ~~SEQ.ID.NO.:~~ SEQ ID NO:2, ~~SEQ.ID.NO.:~~ SEQ ID NO:4, ~~SEQ.ID.NO.:~~ SEQ ID NO:28, positions 105-1,859 of ~~SEQ.ID.NO.:~~ SEQ ID NO:2, positions 105-1,409 of ~~SEQ.ID.NO.:~~ SEQ ID NO:4, and positions 11-1,663 of ~~SEQ.ID.NO.:~~ SEQ ID NO:28.

3. (Currently Amended) An isolated DNA comprising a sequence that is identical to ~~SEQ.ID.NO.:~~ SEQ ID NO:2 except that it contains a ~~different~~ different nucleotide at a position selected from the group consisting of positions 120, 121, 122, 357, 358, 359, 381, 382, 383, 783, 784, 785, 999, 1000, and 1001.

4. (Canceled) An isolated DNA that hybridizes under stringent conditions to a nucleotide sequence selected from the group consisting of: ~~SEQ.ID.NO.:~~1, ~~SEQ.ID.NO.:~~2, ~~SEQ.ID.NO.:~~4, and ~~SEQ.ID.NO.:~~28.

5. (Original) An expression vector comprising the DNA of claim 1.

6. (Original) A recombinant host cell comprising the DNA of claim 1.

7. (Currently Amended) A CG1CE protein, substantially free from other proteins, having an amino acid sequence selected from the group consisting of ~~SEQ.ID.NO.:~~ SEQ ID NO:3, ~~SEQ.ID.NO.:~~ SEQ ID NO:5, and ~~SEQ.ID.NO.:~~ SEQ ID NO:29.

8. (Original) The CG1CE protein of claim 8 containing a single amino acid substitution.

9. (Original) The CG1CE protein of claim 9 where the substitution occurs at position 6, 85, 93, 227, or 299.

10. (Original) The CG1CE protein of claim 9 where the substitution is a conservative substitution.

11. (Original) The CG1CE protein of claim 8 containing two amino acid substitutions.

12. (Original) The CG1CE protein of claim 8 containing an amino acid substitution where the substitution does not occur in a position where the amino acid present in CG1CE is also present in the corresponding position in one of the *C. elegans* proteins whose partial amino acid sequence is shown in Figure 7.

13. (Currently Amended) An antibody that binds specifically to a CG1CE protein where the CG1CE protein has the amino acid sequence selected from the group consisting of ~~SEQ ID NO:1~~; SEQ ID NO:3 and ~~SEQ ID NO:4~~; SEQ ID NO:5.

14. (Currently Amended) A method of diagnosing whether a patient carries a mutation in the CG1CE gene that comprises:

- (a) providing a DNA sample from the patient;
- (b) providing a set of PCR primers based upon ~~SEQ ID NO:1~~; SEQ ID NO:2 or ~~SEQ ID NO:3~~; SEQ ID NO:4;
- (c) performing PCR on the DNA sample to produce a PCR fragment from the patient;
- (d) determining the nucleotide sequence of the PCR fragment from the patient;
- (e) comparing the nucleotide sequence of the PCR fragment from the patient with the nucleotide sequence of ~~SEQ ID NO:1~~; SEQ ID NO:2 or ~~SEQ ID NO:3~~; SEQ ID NO:4;

~~where a difference between the nucleotide sequence of the PCR fragment from the patient with the nucleotide sequence of SEQ.ID.NO.:2 or SEQ.ID.NO.:4 indicates that the patient carries a mutation in the CG1CE gene wherein a sequence of nucleotides of that differ from one of said SEQ ID NO:1 or SEQ ID NO:2 indicates that said patient carries a mutation in the CG1CE gene .~~

15. (Currently Amended) The method of claim ~~15~~ 14 where the DNA sample is genomic DNA.

16. (Currently Amended) The method of claim ~~15~~ 14 where the DNA sample is cDNA.

17. (Canceled) A DNA or RNA oligonucleotide probe comprising at least 18 contiguous nucleotides of at least one of a sequence selected from the group consisting of: SEQ.ID.NO.:1, SEQ.ID.NO.:2, SEQ.ID.NO.:4, and SEQ.ID.NO.:28.

18. (Canceled) A method for determining whether a substance is an activator or an inhibitor of a CG1CE protein or a mutant CG1CE protein comprising:

(a) recombinantly expressing CG1CE protein or mutant CG1CE protein in a host cell;

(b) measuring the biological activity of CG1CE protein or mutant CG1CE protein in the presence and in the absence of a substance suspected of being an activator or an inhibitor of CG1CE protein or mutant CG1CE protein;

where a change in the biological activity of the CG1CE protein or the mutant CG1CE protein in the presence as compared to the absence of the substance indicates that the substance is an activator or an inhibitor of CG1CE protein or mutant CG1CE protein.